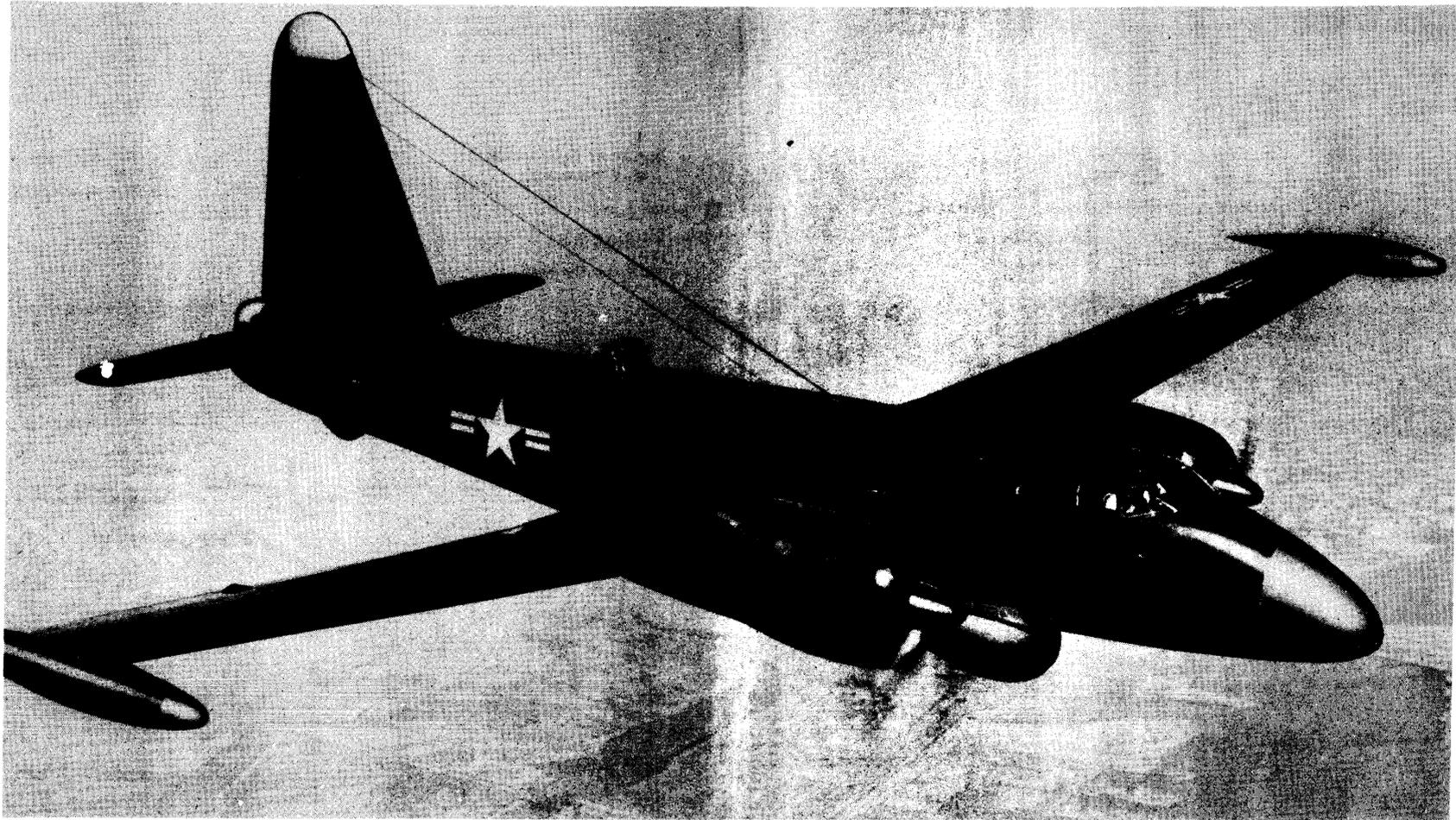


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STANDARD AIRCRAFT CHARACTERISTICS

P2V-4 "NEPTUNE"

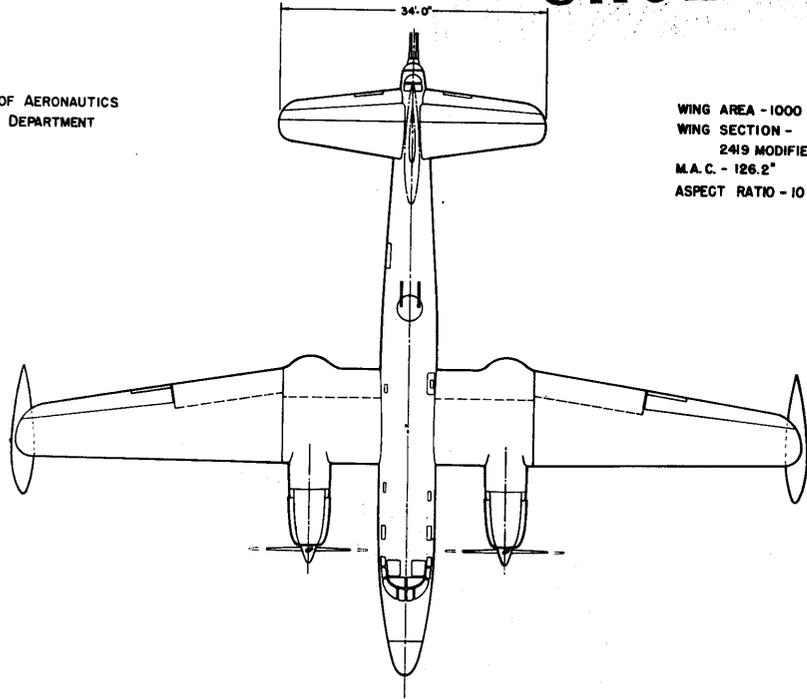
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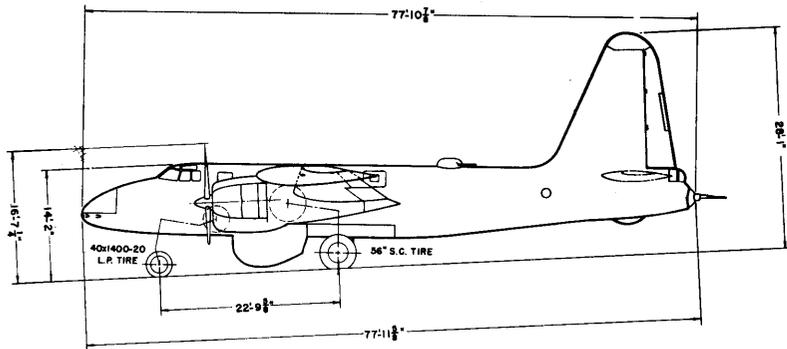
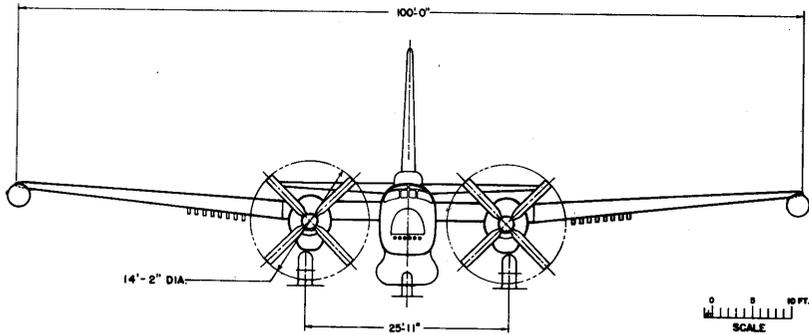
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Standard Aircraft Characteristics NAVAER 1335A (REV. 1-49)

BUREAU OF AERONAUTICS
NAVY DEPARTMENT



WING AREA - 1000 SQ. FT.
WING SECTION -
2419 MODIFIED & 4410.5
M.A.C. - 126.2"
ASPECT RATIO - 10

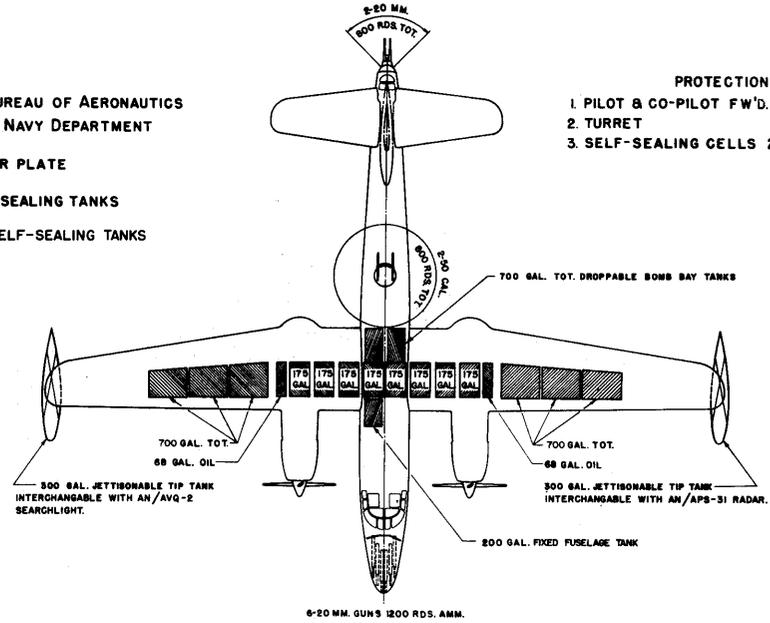


DESCRIPTIVE ARRANGEMENT

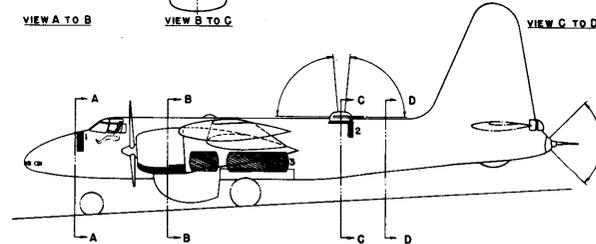
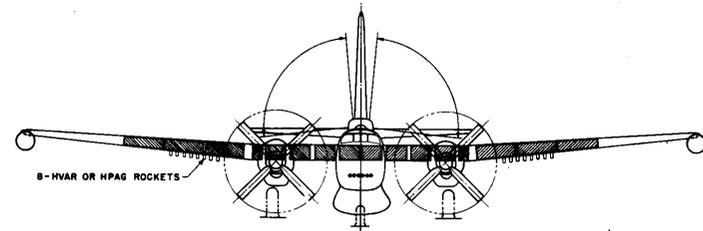
BUAER NO. 8513

BUREAU OF AERONAUTICS
NAVY DEPARTMENT

- ARMOR PLATE
- SELF-SEALING TANKS
- ☒ NON SELF-SEALING TANKS



PROTECTION
1. PILOT & CO-PILOT F.W'D. 200 LBS.
2. TURRET 150 LBS.
3. SELF-SEALING CELLS 2500LBS. EST.



ARMAMENT & TANKS

BUAER NO. 8514

UNCLASSIFIED

MISSION AND DESCRIPTION

The P2V-4 airplane is designed for use as a day and night land-based, anti-submarine, long range patrol airplane. Its secondary tactical missions are rocket attack, night torpedo attack, mine laying, bombing, and photo reconnaissance.

The P2V-4 was developed from the P2V-3, with strengthening of structure to permit operation at higher gross weights. Like the P2V-3, the P2V-4 has an all-metal semi-monocoque fuselage with wings of conventional two-spar dural construction.

It has a crew of seven, Fowler-type wing flaps with aileron droop, "varicam" stabilizer, thermal anti-icing of wing, tail surfaces and windshield, and 50 gallons of water for combat power. Propellers are fitted with electrical de-icing. A K-25 camera and D-1 flasher are carried. A right hand wing-tip nacelle carries a searchlight, or alternately a 300 gallon tip tank. A left hand wing-tip nacelle carries an AN/APS-31 attack radar, or alternately a 300 gallon tip tank. Eight rocket launchers are mounted under each wing and will accommodate the 5" HVAR or HPAG rockets. The first flight of the prototype was January 1948; first flight of the pilot model was September 1949; and entering service in March 1950.

DIMENSIONS

WING AREA.....1,000 sq. ft.
SPAN.....100' - 0"
LENGTH.....78' - 0"
HEIGHT.....28' - 1"
TREAD.....25' - 11"
M.A.C.....10' - 6"

WEIGHTS

Loadings	Lbs.	L.F.
EMPTY.....	41,549.....	
BASIC.....	44,000.....	
DESIGN.....	67,500.....	2.67
COMBAT.....	60,827.....	3.00
MAX.T.O.....	80,000.....	2.3
MAX.LAND.....	59,000.....	

All weights are calculated.

FUEL AND OIL

Gals.	No. Tanks	Location
2,800	4	Wing, S.S.
200	1	Fuse, S.S.
600	2	Wing, Tip
700	2	Bomb Bay
FUEL GRADE....115/145		
FUEL SPEC.....AN-F-48		

OIL

CAPACITY (Gals.).....136
GRADE.....1120
SPEC.....AN-O-8

ELECTRONICS

VHF & HOMING.....AN/ARC-1A
TRANSCEIVER.....AN/ARC-2
MF RECEIVER.....AN/ARC-5
TRANSCEIVER.....AN/ART-13
HF RECEIVER.....AN/ARR-15A
VHF HOMING SYS.....AN/ARA-8
SONOBUOY RECEIVER..AN/ARR-31
AUTO.D.F.....AN/ARN-6
MARKER BEACON REC...AN/ARN-8
ALTIMETER.....AN/APN-1
LORAN.....AN/APN-4
RADAR BOMB EQUIP...AN/APA-5A
ASW.....AN/APS-20,-20A
RADAR SEARCH.....AN/APS-31
IFF.....AN/APX-2,-2A,-6
PULSE ANALYZER....AN/APA-64A
SEARCH ANALYZER....AN/APR-9
SEARCHLIGHT.....AN/AVQ-2

(SEE NOTES)

POWER PLANT

NO. & MODEL....(2) R-3350-30W
MFR.....Wright
SUPERCH.....1 Stage, 2 Speed
PROP GEAR RATIO.....0.4375
PROP MFR.....Ham. Std.
NO. BL./DIA.....4/14'-2"
PROP DES. NO.....2J17C3-36S

RATINGS

	Bhp @	Rpm @	Alt.
T. O.	3,250	2,900	S. L.
COMB.	3,700	2,900	S. L.
	3,000	2,600	11,000
MIL.	3,250	2,900	S. L.
	2,550	2,600	15,400
NORM.	2,600	2,600	S. L.
	2,450	2,600	16,600
SPEC. NO. N-856			

ORDNANCE

GUNS			
No.	Size	Location	Rds.
6	20mm (M-24)	Nose	1,200
2	.50 cal.	Deck	800
2	20mm (M-24)	Tail	800
BOMBS & ROCKETS			
Type	Size	Location	No.
Bombs	100#	Fuselage	6
Bombs	500#	Fuselage	6
or	1,000#	Fuselage	4
Mines	2,000#	Fuselage	2
Bombs	1,600#	Fuselage	2
Mines	Mk. 24	Fuselage	4
Mines	Mk. 34	Fuselage	4
Torp.	1,200#	Fuselage	4
A.R.	11.75"	Fuselage	2
HVAR	5"	Wing	16
FIRE CONTROL			
Pilot.....	Mk.		8-8
Turrets.....	Mk.		18-6
MAX. BOMB CAP.....4,800 lbs.			

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PERFORMANCE SUMMARY					
LOADING CONDITION		(1) PATROL 4 Mk.-41 Torp.		(5) PATROL 4,000# Mines	(6) PATROL
TAKE-OFF WEIGHT	lbs.	72,500		72,500	72,500
Fuel (Fixed/Bomb-Bay)	lbs.	17,184/-		17,984/-	18,000/3,354
Bombs	lbs.	4,800		4,000	-
Wing/Power Loading (A) lbs/sq.ft; lbs/bhp.		72.5/14.8		72.5/14.8	72.5/14.8
Stall Speed--Power off	kn.	99.1		99.1	99.1
Stall Speed--Power off - No Fuel	kn.	84.4		83.6	79.9
Stall Speed--Power on	kn.	78.5		78.5	78.5
Maximum Speed/Alt (B)	kn/ft.	273/19,000		273/19,000	273/19,000
Take-off Distance, deck -- calm	ft.	2,290		2,290	2,290
Take-off Distance, deck	kn.	ft.			
Take-off Distance, Airport	ft.	3,320		3,320	3,320
Rate of climb -- sea level (B)	ft/min.	1,100		1,100	1,100
Service Ceiling	(B) ft.	24,700		24,700	24,700
Time-to-climb 10,000 ft.	(B) min.	9.7		9.7	9.7
Time-to-climb 20,000 ft.	(B) min.	24.6		24.6	24.6
Combat Range/V av 1,500 ft. n.mi/kn.		2,440/158		2,560/158	3,140/156
Combat Radius/V av (See Note) ft. n.mi/kn.	(C)	975/158		(D) 1,330/156	(C) 1,255/156
Combat Endurance/V av 1,500 ft. hrs./kn.		15.6/146			
LOADING CONDITION		(2) COMBAT	(3) COMBAT	(4) COMBAT	
GROSS WEIGHT	lbs.	60,827	60,827	60,827	
Engine power		Combat	Military	Normal	
Fuel	lbs.	10,311	10,311	10,311	
Bombs/Tanks		None	None	None	
Max. speed at sea level	kn.	264	256	239	
Max. speed/Alt	kn/ft.	288/13,500	286/17,700	281/19,000	
Combat speed/Alt	kn/ft.	269/1,500	260/1,500	243/1,500	
Rate of climb SL	ft/min.	2,390	2,030	1,510	
Ceiling for 500 fpm R/C	ft.	23,600	23,600	23,600	
Time-to-climb/Alt.	min/ft.	--	--	--	

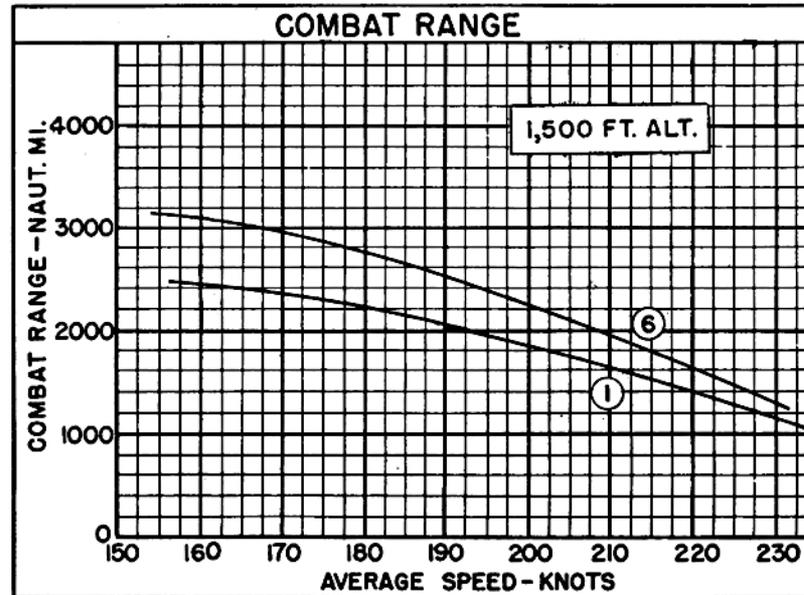
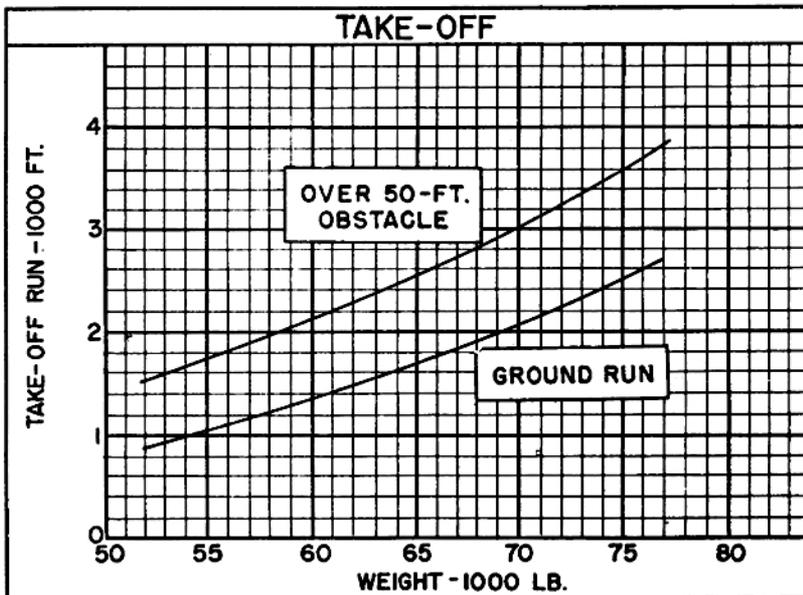
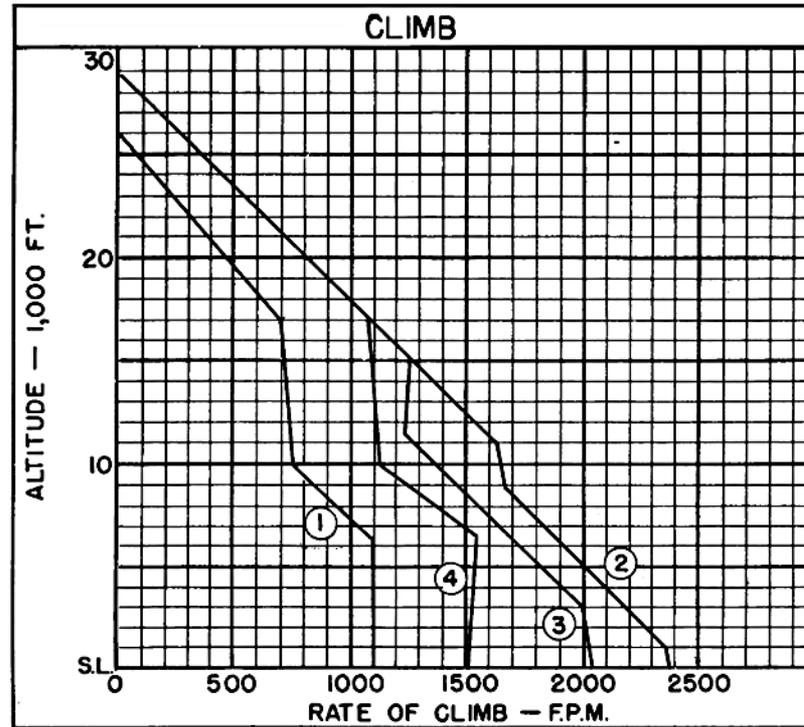
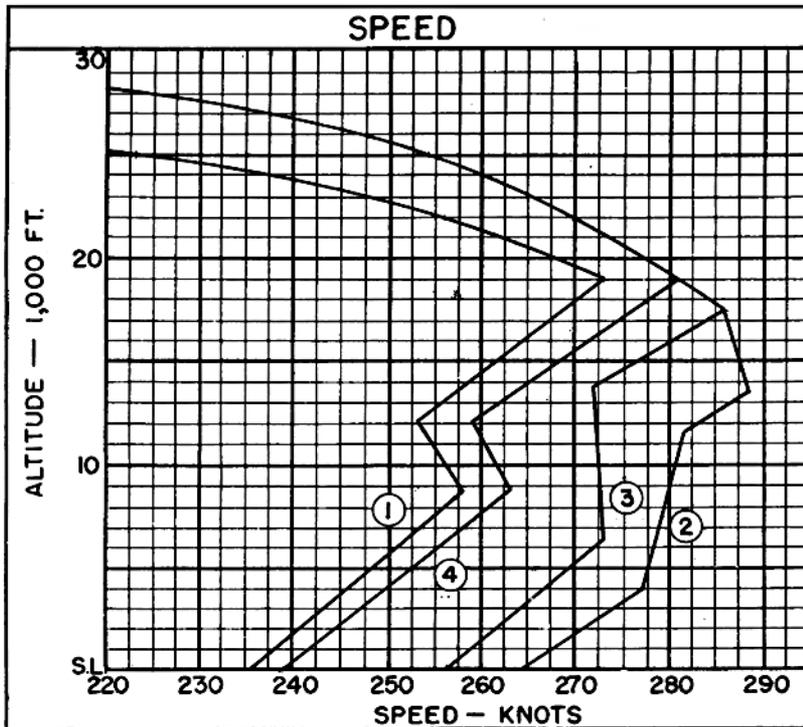
NOTES

- (A) BHP at Maximum Critical Altitude
- (B) Normal BHP

Performance is based on flight test of P2V-3 airplane.

 Combat range, radius and endurance are based on engine specification fuel consumption increased 5%.

Combat radius in Conditions (1) and (6) is based on ASW-1 problem; in Condition (5), on A-2 problem (modified).



Standard Aircraft Characteristics NAVAER 1335E (REV. 1-49)

○ LOADING CONDITION COLUMN NUMBER

NOTES

(C) GENERAL ASW PATROL PROBLEM NO. ASW-1

COMBAT RADIUS = 40% of combat range at 1,500 ft. altitude.

(D) ATTACK COMBAT RADIUS PROBLEM NO. A-2 (MODIFIED)

The attack combat radius problem No. A-2 has been modified to serve as a mining radius problem for reciprocating engined aircraft. The combat radius in Condition (5) is based on the following problem:

<u>WARM-UP</u> <u>TAKE-OFF</u> <u>RENDEZVOUS</u> Fuel for 10 min. nor. power sea level—all engines	<u>CLIMB</u> to 1,500 ft. at Normal power, normal mixture	<u>CRUISE-OUT</u> at 1,500 ft. at velocity for maximum range	<u>DROP or FIRE</u> expendable ordnance (No distance made good)	<u>COMBAT</u> 5 minutes at 1,500 ft. at com- bat power	<u>CRUISE-BACK</u> at 1,500 ft. at velocity for maximum range	<u>RESERVE</u> 10% of initial fuel load
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COMBAT RADIUS = CLIMB / CRUISE-OUT = CRUISE-BACK

Single engine rate-of-climb at sea level, on military power, as follows:

Gross Weight, Lbs.	Rate-of-Climb, Ft./Min.
50,000	880
60,000	550
70,000	280

Water available for 11 minutes at combat power. All radii are reduced approximately 4 n. miles for each minute of combat power operation, and 5 n. miles for each minute of military power operation, at 1,500 feet altitude.

The same flight plan is followed in the determination of endurance as in that of combat range, except that the average speed used for maximum endurance is the minimum recommended speed.

All conditions: Rockets and rocket launchers not aboard. Sixteen Mk-9 rocket launchers installed decrease the range by 25 minutes.

Condition (1): Addition of sixteen 5" HVAR rockets and removal of two torpedoes (in order not to increase the take-off weight) decreases the range by about 100 minutes.

The first 26 P2V-4 airplanes will be delivered with R-3350-26W engines. The R-3350-30W engine will be fitted retroactively when available. With the R-3350-26W engines, range is decreased by about 13%.

All conditions: Performance is calculated with attached wing-tip nacelles carrying electronic gear.

The following Electronic equipment is to be service installed:

GROUND POSITION INDICATORS.....AN/APA-57,-81
IFF.....AN/APX-6
RCM DF.....AN/APA-69
RADIO RECEIVING SET.....AN/ARR-26
RADIO TRANSMITTING SET.....AN/ART-26